DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002909
Date Inspected: 14-Jun-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1630
Location: Shanghai, China

CWI Name: Zhao Chen Sun and Hu Wei Qing

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG and SAS Tower Fabrication

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on pre-assembly bays mentioned below;

Bay 4: Tower Diaphragm
This QA observed ZPMC MT personnel Wang Wei perform 10% Magnetic Particle Testing on fillet weld between 5-open rib stiffener to side panel SP426-001-001~010 and 2-open rib stiffener to edge panel EP025-001-010~013. It was noted that rust and scale have been removed by ZPMC workers on weld areas prior MT testing. Electromagnetic Yoke was used with alternating current (AC) as power source. The detection media used was dry red ferromagnetic particles and applied with powder blower while the magnetizing force is on. While the ZPMC NDT Wang was MT testing the welds, this QA randomly perform VT and 10%MT on fillet welds mentioned and appears conforming to the project requirements. This QA also observed ZPMC's conduct of MT on these welds deemed acceptable.

The QA Inspector randomly observed two ZPMC welders ID number 053609 and 053605 utilizing the FCAW Process in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly NSD1-SA335-4A and NSD1-SA335-9A respectively. The QA Inspector randomly observed ZPMC CWI Zhao Chen Sun monitoring weld parameters.

Bay 7: OBG - Floor Beam Sub Assembly:
QA Inspector JLizardo randomly observed ZPMC qualified welder Mr. Cao Tao ID #066163 repair fillet welding FB011-005-009 per Welding Repair Report B-WR427. Mr. Cao was observed welding in the 2F (horizontal) position utilizing a Shielded Metal Arc Welding (SMAW) process with a 4mm diameter 7018 electrode. QA Inspector Lizardo observed the ZPMC QC CWI Inspector Huang Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Huang Wei Qing to be: welding parameters amps of 170, and volts of 25.5. Welding parameters observed by QA Inspector Lizardo appear to be in general compliance with the approved WPS-345-SMAW-1G(1F) Repair.

This QA observed ZPMC MT personnel Wang Wei perform 25% Magnetic Particle Testing on fillet weld between web plate to flange and stiffener on floor beam sub-assembly FB015-007 and FB015-011. It was noted that rust and scale have been removed by ZPMC workers on weld areas prior MT testing. Electromagnetic Yoke was used with alternating current (AC) as power source. The detection media used was dry red ferromagnetic particles and applied with powder blower while the magnetizing force is on. While the ZPMC NDT Wang was MT testing the welds, this QA randomly perform VT and 10%MT on fillet welds mentioned and appears conforming to the project requirements. This QA also observed ZPMC’s conduct of MT on these welds deemed acceptable.

QA Inspector J. Lizardo randomly observed ZPMC qualified welder Zhong Qing Quan ID #044774 groove welding fill pass on (flange to web plate) tee joint. Mr. Zhong was observed welding in the 2G (horizontal) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic at floor beam FB001-005-043. QA Inspector Lizardo observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

FCAW fillet welding (3F) was observed on stiffener to web plate on floor beam sub-assembly FB012-009 weld joints 005/006, 003/004 and 007/008. ZPMC welders working on this was identified as Zhuo Jibo ID# 065564 following procedure WPS-B-T-2133. ZPMC CWI Hu Wei Qing was noted monitoring the parameters. This QA randomly observed FCAW fillet welding on welded spacer beam W5.5 X 25.5 inches long for floor beam FB006-051-014/013 and FB006-055-005/006 by two ZPMC welder Chen Chun Zong ID# 044824 and Zhang Liang ID# 067036 using WPS-B-T-2132-3.

Bay 8: Tower Diaphragms
This QA randomly observed heat straightening of tower diaphragm plate spliced butt joint NSD1-SA196 A/B due to welding distortion. Natural gas was used and less than 600 degree C thermal heat input was implemented following procedure HSR1(T)-2379. Heat straightening was also observed on longitudinal shear plate LD011-002-011 weld joints 001 ~ 012 due to welding distortion. Oxy-acetylene gas was used and less than 650 degree C thermal heat input was implemented following procedure HST1(B)-1133.

Tack welding/fit-up of stiffener to web plate on various longitudinal shear plates LD004-011-003/004, LD004-012-003/004 and LD009-003-003/004 was observed using 4.0mm diameter, TL-508 electrode. ZPMC welder ID #045240 was also noted FCAW 3G tack welding on tower diaphragm flange NSD1-SA270-5A following procedure WPS-B-T-2233-B-U3-F. QA Inspector Lizardo observed the ZPMC QC CWI Inspector Lvliqing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure

Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Lvliqing: welding parameters amps of 214, and volts of 25.5 with travel speed of 115mm/min. Welding parameters observed by QA Inspector Lizardo appear to be in general compliance with the approved WPS.

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer